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**BEFORE THE BOARD OF PATENT APPEALS  
AND INTERFERENCES**

Application Number: 10/520,536  
Filing Date: October 14, 2005  
Appellant(s): ROHDE ET AL.

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Shao-Hua Guo  
For Appellant

**EXAMINER'S ANSWER**

This is in response to the appeal brief filed October 20, 2009 appealing from the Office action mailed December 12, 2008.

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**(1) Real Party in Interest**

A statement identifying by name the real party in interest is contained in the brief.

**(2) Related Appeals and Interferences**

The examiner is not aware of any related appeals, interferences, or judicial proceedings which will directly affect or be directly affected by or have a bearing on the Board's decision in the pending appeal.

**(3) Status of Claims**

The statement of the status of claims contained in the brief is correct.

**(4) Status of Amendments After Final**

No amendment after final has been filed.

**(5) Summary of Claimed Subject Matter**

The summary of claimed subject matter contained in the brief is correct.

**(6) Grounds of Rejection to be Reviewed on Appeal**

The appellant's statement of the grounds of rejection to be reviewed on appeal is correct except for the listing of the double patenting rejections which have been overcome. The terminal disclaimer filed on 4/30/09 disclaiming the terminal portion of any patent granted on this application which would extend beyond the expiration date of U.S. Patent 6,893,603 has been reviewed and is accepted. The terminal disclaimer has been recorded.

**(7) Claims Appendix**

The copy of the appealed claims contained in the Appendix to the brief is correct.

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**(8) Evidence Relied Upon**

US 2002/0105115	Sadr	8-8-2002
US 2001/0015513	Schaftingen et al.	8-23-2001
Specification Pages 3-4	Admitted Prior Art	
DE 10042121	Rohde et al.	3-14-2002
US 6,893,603	Rohde et al.	5-17-2005
US 4,170,449	Shuman	10-9-1979

**(9) Grounds of Rejection**

The following ground(s) of rejection are applicable to the appealed claims:

Claims 1-9, 12-19, and 23-26 are rejected under 35 U.S.C. 103(a) as being unpatentable over Sadr (U.S. Patent Application Publication 2002/0105115) in view of Schaftingen et al. (U.S. Patent Application Publication 2001/0015513) or the admitted prior art (Specification pages 3-4 and in particular the description of DE 10042121 wherein U.S. Patent 6,893,603 is also used as an English equivalent/translation as the patent claims priority to DE 10042121).

Sadr discloses a process for producing hollow plastic articles such as a fuel tank comprising producing a tubular plastic parison (22) by means of extrusion or coextrusion, cutting (18) open the tubular plastic parison to produce two planar-surface parts, molding by thermoforming or blow molding the planar-surface parts in two mold halves (12 and 14) to give half shells wherein a removable intermediate frame (16) separates the mold halves from one another at least along peripheral edges wherein the planar-surface parts and half shells are not in contact with each other, opening the mold halves and removing the intermediate frame, and bonding by welding the half shells along a peripheral rim (Figures 1-10 and Paragraphs 0004,

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0009, 0023, 0026, 0032, 0034, 0036, and 0037). Sadr does not specifically teach bonding by welding the half shells along a peripheral rim by closing the mold halves, it being noted Sadr does not specifically describe the bonding. Schaftingen discloses a process for producing hollow plastic articles such as a fuel tank comprising producing a tubular plastic parison by means of extrusion or coextrusion, cutting open the tubular plastic parison to produce two planar-surface parts, molding by blow molding the planar-surface parts in two mold halves to give half shells and bonding by welding the half shells along a peripheral rim using closed mold halves (the Figure and Paragraphs 0019 and 0021). The admitted prior art discloses a process for producing hollow plastic articles such as a fuel tank comprising producing a tubular plastic parison by means of extrusion or coextrusion, cutting open the tubular plastic parison to produce two planar-surface parts, molding by thermoforming the planar-surface parts in two mold halves to give half shells, opening the mold halves, closing the mold halves wherein the half shells come into contact with one another along a peripheral rim, and bonding the half shells (Page 3, line 21-Page 4, line 10 of the Specification and Column 7, lines 4-64 of '603). It would have been obvious to one of ordinary skill in the art at the time the invention was made to bond the half shells as taught by Sadr by simply closing the mold halves as was the known simple technique as shown by Schaftingen or the admitted prior art.

Regarding claims 2 and 3, Sadr appears to teach that after removal of the intermediate frame that parts such as fuel lines, pumps, sensors, etc. are attached to the inside of at least one of the molded half shells (Paragraphs 0004 and 0006). In the event it is considered Sadr does not necessarily suggest incorporating these parts the following rejection would apply. Schaftingen (Paragraph 0032) and the admitted prior art (Column 7, lines 42-64 of '063) are evidence it was

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known to attach fuel tank parts such as those claimed to at least one of the molded half shells before bonding the half shells. It would have been obvious to one of ordinary skill in the art at the time the invention was made to include in Sadr a step of attaching fuel tank parts to at least one of the molded half shells after opening the mold halves and removal of the intermediate frame as such parts were known to be attached prior to bonding the half shells as shown by Schaftingen or the admitted prior art to form a functional fuel tank.

Regarding claims 6 and 13, the process taught by Sadr as modified by Schaftingen or the admitted prior art uses heat from molding to weld the half shells without additional heating or cooling steps.

Regarding claim 7, it is considered that the shaping of the bond line into a particular geometry by the closed mold halves such as specified by the admitted prior art (Column 7, lines 56-64 of '063) after initial bonding of the half shells is further molding by thermoforming.

Regarding claims 8, 9, and 12, the intermediate frame taught by Sadr is of single-part or multipart design and comprises a plate insert which substantially provides complete filling of an area between the two mold halves wherein the frame comprises equipment for blowing air considered equipment for either cooling or heating (Figure 5).

Regarding claims 14, 19, and 23 Sadr does not teach including driven units of a floating roller type. However, it was known to include such for guiding the parison over the cutting device as shown by Schaftingen (the Figure and Paragraphs 0030 and 0046). It would have been obvious to one of ordinary skill in the art at the time the invention was made to include in Sadr driven units of a floating roller type for guiding the parison over the cutting device as shown by Schaftingen.

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Regarding claim 15, Sadr cuts the tubular plastic parison before the extrusion process is complete.

Regarding claims 16-18 and 24-26, Sadr is not limited to any plastic parison and specifically suggest at least one or two polymeric layers one of which may be a barrier layer (Paragraph 0036). Schaftingen (Paragraphs 0014 and 0015) and the admitted prior art (Column 5, lines 10-67 of '063) are exemplary of extruding a parison for a fuel tank having the particular layers of claims 16-18 and 24-26 which tank has a leakproof nature and mechanical stability. It would have been obvious to one of ordinary skill in the art at the time the invention was made to use as the parison taught by Sadr one formed of layers known to form a fuel tank having a leakproof nature and mechanical stability such as that shown by Schaftingen or the admitted prior art.

Claims 9, 10, 11, and 22 are rejected under 35 U.S.C. 103(a) as being unpatentable over Sadr and Schaftingen or the admitted prior art as applied to claims 1-9, 12-19, and 23-26 above, and further in view of Shuman (U.S. Patent 4,170,449).

Sadr and Schaftingen or the admitted prior art as applied above teach all of the limitations in claims 9, 10, 11, and 22 except for a specific teaching that the intermediate frame includes equipment for controlled heating of the edges of the molded half shells and the pinch-off edge of the half molds, it being noted the intermediate frame taught by Sadr clamps the edge of the planar-surface parts to the pinch-off edge of the half molds during thermoforming. It is well taken in the art of thermoforming of a planar-surface part using a frame that the frame includes equipment for controlled heating of the frame to prevent edges of the planar-surface part which are clamped from cooling and distorting during thermoforming as shown by Shuman (Column 1,

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lines 19-64 and Column 2, lines 16-21). It would have been obvious to one of ordinary skill in the art at the time the invention was made to include in the intermediate frame taught by Sadr as modified by Schaftingen or the admitted prior art equipment for controlled heating of the frame as is well taken in the art as shown by Shuman to prevent edges of the planar-surface part from distorting during thermoforming.

### **(10) Response to Argument**

Response to arguments regarding the rejection of claims 1-9, 12-19, and 23-26 under 35 U.S.C. 103(a) as being unpatentable over Sadr in view of Schaftingen or the admitted prior art.

Appellants argue on page 6, “Unlike Appellants’ invention, Sadr does not teach an integrated process which comprises the cutting and guiding in the presence of a removable intermediate frame, the thermal forming the half shells, the removing the frame and the closing thereafter, and bonding by welding the half shells. These steps in claims 1 and 19 are performed continuously without any interruption. Contrarily, as the Examiner correctly recognized in the Final Office Action of December 12, 2008, Sadr does not teach, for instance, bonding by welding the half shells. See page 2, item 3 of the Final Office Action.”.

It was not asserted that Sadr does not teach bonding by welding the half shells. Rather, Sadr expressly teaches welding the half shells (Paragraph 0037). Sadr is silent as to welding the half shells by closing the mold halves as in step e) of claims 1 and 19 wherein Sadr is modified by Schaftingen or the admitted prior art to teach this step. Sadr is simply silent as to describing the particular method of welding which lack of description is considered to indicate the particular method of welding is not critical to Sadr. Finally, it is noted Sadr as modified teaches a method of producing hollow plastic articles that is continuous without any interruption. However, as to appellants arguments regarding this feature the claims are not commensurate in scope as the claims do not require the method is continuous and/or without interruption.



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Appellants further argue on page 7, "Appellants respectfully note here that Schaftingen et al., like Sadr, does not teach a continuous operation after removing the intermediate frame. Because Schaftingen et al. do not use the removable intermediate frame, bonding the half shells on the mold halves along a peripheral rim is difficult since there is often insufficient plastic material along the rim for forming consistent bonding."

Schaftingen was not applied to teach the intermediate frame. Schaftingen is applied to show molding the planar-surface parts in two mold halves to give half shells and bonding by welding the half shells along a peripheral rim using closed mold halves wherein the molding and welding steps occur independently or at the same time (Paragraph 0019, 0021, and 0039). Schaftingen does not describe any difficulty in molding or welding along the peripheral rim by using closed mold halves to weld the half shells.

Appellants further argue on page 8, "However, as Appellants discussed in the Specification, page 4, lines 3-11, the process of the invention eliminates the disadvantages of the known processes. The use of an intermediate frame or of a plate insert, and the opening and closing of the mold halves at various closure points, permits subdivision of the process known from DE 100 42 121 into functional steps, and this substantially facilitates incorporation of components into the interior of the hollow article, and permits a decisive improvement in the quality of the hollow article. The process of the invention also permits problem-free incorporation of relatively large components in the interior of the hollow article, substantially without contact with the unmolded semi-finished product. The Examiner apparently overlooked or ignored these discussions about the differences between Appellants' invention and DE 100 42 121."

DE 100 42 121 was not applied to teach the intermediate frame. The admitted prior art as exemplified by the discussion of DE 100 42 121 and US 6,893,603 used as the English equivalent to DE 100 42 121 is applied to teach molding by thermoforming the planar-surface parts in two mold halves to give half shells, opening the mold halves, closing the mold halves wherein the half shells come into contact with one another along a peripheral rim, and bonding the half shells (Page 3, lines 21-37 of Appellants specification and Column 7, lines 29-54 and Column 8, lines 5-11 of US 6,893,603).

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Appellants further argue on page 10, “Thus, the combined teachings of Sadr and Schaftingen et al. or the “admitted prior art” cannot make Appellants’ invention obvious under 35 U.S.C. §103(a) because to make Appellants’ invention obvious, there must be some suggestion or motivation, either in the references themselves or in the knowledge generally available to one of ordinary skill in the art, to modify the reference or to combine reference teachings, there must be a reasonable expectation of success, and the prior art reference (or references when combined) must teach or suggest all the claim limitations. See MPEP §2142. The Examiner’s obviousness rejection has failed to meet any of these three conditions articulated by, MPEP §2142. Appellants thus respectfully ask the Honorable Board of Appeals to reverse the Examiner’s obviousness rejection of claims 1 and 19 as well as their dependent claims 2-9, 12-18 and 23-26 over Sadr in view of Schaftingen et al. or the “admitted prior art.””.

Sadr teaches welding two molded half-shells. Sadr does not teach any particular method of welding demonstrating the method is not critical. Schaftingen and the admitted prior art disclose processes very similar to that of Sadr wherein welding of the molded half-shells is performed by simply closing the molds used to form the half shells. It would have been obvious to one of ordinary skill in the art to perform the welding in Sadr using the known suitable and simple method shown by Schaftingen or the admitted prior art wherein because of the similarities between the methods taught by Sadr and Schaftingen or the admitted prior art one of ordinary skill in the art would have readily expected welding the two half-shells by closing the mold halves would have the expected result.

Appellants argue on page 7 regarding claim 6, “In such a continuous process as described in claims 1 and 19, it is important that the temperature is kept at a constant level and that essentially no heat loss occurs. This feature is described in dependent claim 6 and this feature is missing from Sadr.”.

Claim 6 is not commensurate in scope with this argument as neither claim 6 nor any of the other claims require the temperature is kept at a constant level and/or that essentially no heat loss occurs. Claim 6 requires “wherein heat from thermoforming is used to weld the half shells”. The claim does not require preclude any additional heating during welding or maintenance of the

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temperature to ensure no heat loss. Sadr as modified by Schaftingen or Sadr teach thermoforming to mold the two halves without any disclosure of cooling the two halves such that because the welding step by closing the mold halves immediately occurs following opening the mold to remove the intermediate frame the two halves inherently remain heated to some extent above ambient which heat is from thermoforming and used to weld the half shells such that the limitation is met. Furthermore, neither Schaftingen nor the admitted prior art teach any additional heating during welding such that it would appear the heat from thermoforming must be used to weld the half shells otherwise the half shells would not weld. Finally, the admitted prior art expressly teaches using heat from thermoforming to weld the half sheets, e.g. See page 3, lines 35-37 of Apellants specification or Column 8, lines 10-11 of US 6,893,603.

Apellants argue on page 7 regarding claim 9, "Another important feature of the invention which is missing from Sadr is that the intermediate frame used in the invention is equipped with heating and cooling which supports the process running smoothly and continuously. This feature is described in dependent claim 9."

Claim 9 requires the intermediate frame "comprises equipment for cooling or heating".

Sadr teaches intermediate frame (16) including wherein the frame comprises outlets (72) for blowing gas which outlets and/or blowing gas generator are considered equipment for cooling or heating that is part of the intermediate frame.

Apellants further argue on page 11 regarding claim 15, "Still another important feature of the invention which is missing from Sadr, Schaftingen et al, and the "admitted prior art" is that the cutting of the tubular plastic parison takes place before the extrusion process is complete. It means that a cutting knife is not present and not even needed as long as the liquid plastic melt is divided already within the extrusion die next to the exit, producing thereby the half shells in situ. This feature is included in dependent claim 15. Thus claim 15 should be independently non-obvious over Sadr in view of Schaftingen et al., or the "admitted prior art."".

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The claims are not commensurate in scope with this argument as the claims and specifically claim 15 do not require cutting the liquid plastic melt within the extrusion die next to the exit. Claim 15 requires “wherein the cutting of the tubular plastic parison takes place before the extrusion process is complete”. Sadr cuts the tubular plastic parison using a cutter (18) to cut the tube and form the two-planar surface parts where the parison is cut during extrusion and prior to extruding the entire parison, i.e. before the extrusion process is complete.

Response to arguments regarding the rejection of claims 9, 10, 11, and 22 under 35 U.S.C. 103(a) as being unpatentable over Sadr and Schaftingen or the admitted prior art and further in view of Shuman.

No further argument was made.

**(11) Related Proceeding(s) Appendix**

No decision rendered by a court or the Board is identified by the examiner in the Related Appeals and Interferences section of this examiner’s answer.

For the above reasons, it is believed that the rejections should be sustained.

Respectfully submitted,

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